Teachers' Attitudes, Bias, and Perceptions Pertaining to Students with AD/HD and Effects on the Teacher/Student Relationship

by

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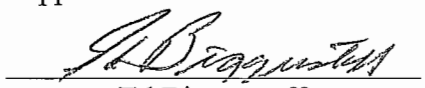

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ABSTRACT

Current studies have indicated that in 2006, "over 4 ½ million children 3-17 years old were diagnosed with AD/HD" (CDC, 2006, n.p). There are concerns regarding teachers' attitudes, biases, and perceptions of AD/HD and how it affects their ability to teach and impact these children academically. Information regarding the prevalence, possible causes, diagnostic criteria, gender differences, and assessments used in the school environment are reviewed in this paper. Academic and social difficulties AD/HD students may have in the classroom and the effects of the AD/HD label on the perceptions of teachers and peers are also examined. Previous research suggests that the attitudes, biases and perceptions teachers have of AD/HD students stem from the frustrations in the classroom based on a lack of education and a lack of support district wide (Harrison & Rush, 2008). Evidenced-based classroom interventions for teachers to use that helps AD/HD students with academic and behavioral problems are provided. Recommendations are

provided as to what school districts and school psychologists can do to supply adequate support for teachers working with AD/HD students. Further research on teachers' attitudes, biases, and perceptions of AD/HD students is recommended. Research in the pre-service training of teachers in the area of AD/HD should also continue to be explored.

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Chapter I: Introduction

Attention-Deficit Hyperactivity Disorder (AD/HD) is one of the most frequent diagnoses in schools today. According to the National Association of Mental Illness (NAMI) AD/HD is defined as "an illness that is characterized by inattention, hyperactivity and impulsivity" (2006, n.p). AD/HD is the most commonly diagnosed behavior disorder among children and adolescents. There are three different types of AD/HD, which are: predominate hyperactivity/impulsivity type, inattention type and combined.

AD/HD is diagnosed using many different techniques. These techniques include behavioral rating scales that are filled out by parents, teachers and the individual along with observations in different types of environments.

There are no conclusive causes of AD/HD. There are however, some theories. These theories include brain development, traumatic brain injury, genetic predisposition, environmental factors, prenatal care and the consumption of artificial coloring and preservatives. Research has shown that it affects more of the male than the female population. Research has also shown that if the father exhibits AD/HD, then one or all of his children will exhibit and be diagnosed with AD/HD at some point in their lifetime.

Research shows that there is a definite difference in the size of the brain in the areas that deal with impulse control and transferring information from short-term to long-term memory. By adulthood, the brain size and capacity are in the normal ranges compared to any normal healthy adult.

Accordin g to NAMI (2006) AD/HD "affects over 2 million American children" (n.p.). This can be seen in the classroom as "an average of at least one child in every U.S. classroom" (n.p.). With this many students exhibiting this disorder, any given teacher in the United States

will likely teach one or more student(s) who displays AD/HD like behaviors but has not been diagnosed yet or a student who has already been clinically diagnosed with AD/HD. For teachers to work effectively with these students, they need to understand how this diagnosis presents itself in the classroom. Teachers also need to work through the frustration and behaviors evidenced by these students. Teachers need to be provided with tools that will allow these students to learn and lower the frustration level in the classroom.

According to the Attentive Deficit Disorder Association (ADDA) "Approximately one-half to two-thirds of children with AD/HD will continue to have significant problems with AD/HD symptoms and behaviors as adults, which impacts their lives on the job, within the family, and in social relationships" (1998, n.p.). This research is important. The way teachers perceive and the tools they have to intervene with students with AD/HD type behaviors effects the students being successful in a classroom setting and how the students perceive themselves in their abilities in school and outside of school. The way we teach our students today will affect their future in many ways. These include how they view themselves as an individual, their choice and ability in their occupation and in personal relationships.

"Students with ADD/ADHD pay the price for their problems in low grades, scolding and punishment, teasing from peers, and low self-esteem" (Benedictis et al, 2007). The effects of teachers' frustrations with students who exhibit AD/HD are seen every day. A teacher's frustration can be seen in the way teachers approach the students' capability to learn and the unique learning style of these types of students. As will be discussed in later chapters, the effects of traumatic brain injuries that have been connected to the cause of AD/HD makes it more difficult for the child to learn with their counterparts. That does not necessarily mean that there is

inability to learn given time for the injuries to heal and the brain to re-wire. This research suggests that AD/HD should be considered as a learning style rather than a deficit.

Since AD/HD is not always diagnosed early in an educational career, a student may be labeled as being difficult and uncontrollable therefore not capable of learning. This then impacts teachers' view of this student, their ability to learn, the students belonging in the classroom, how much time spent helping the student learn and the teacher's frustration level. According to Beszterczey et al. (2002) "general education elementary school teachers rated students with AD/HD as significantly more stressful to teach than their classmates without AD/HD" (n.p). These frustrations lead to biases, prejudices and stereotypes of these students with AD/HD.

The biases, prejudices, and stereotypes of the teacher can also influence the diagnosing process for AD/HD. Since the clinical diagnosing of AD/HD includes behavioral rating scales for the teacher to fill out on how often the disruptive-like AD/HD behavior occurs in the school setting, how teachers view the students can greatly affect their ratings of the students. The teacher may not even know that they are rating the children worse than what occurred.

The recommended teaching of AD/HD students does not prepare a teacher for the reality of having AD/HD students in the classroom. The reality is that students with AD/HD can distract everyone including the teacher. According to Benedictis et al. (2007) some of the challenges that these types of students can be in the classroom are:

> They demand attention by talking out of turn or moving around the room, they have trouble following instructions, especially when they're presented a list, they often forget to write down homework assignments, do them, or bring completed work to school, they often lack fine motor control, which makes note-taking difficult and handwriting a trial to read, they often have trouble with operations that require ordered steps, such as long

> division or solving equations, they usually have problems with long-term projects where they were is no direct supervision, they don't pull their weight during group work and may even keep a group form accomplishing its task (n.p).

Teachers should be given the tools in their educational careers that are proven to be successful with AD/HD type behaviors. These tools should not be just provided for special education professionals since there is such a high statistical likelihood of the amount of students with AD/HD general educational classrooms. These tools should also be provided for the general educational professionals. Some types of tools that create successful learning environments for student with AD/HD are token economies and behavioral modifications.

Statement of the Problem

A purpose of this study is to determine if teachers' posses biases, prejudices, expectations and stereotypes of students who exhibit Attention-Deficit Hyperactivity Disorder (AD/HD). Another focus is to determine if these biases, prejudices, expectations and stereotypes affect the way the students are being taught and how it effects teacher/student relationships on the students perceptions of themselves and their abilities. This study will be conducted through a comprehensive review and analysis of the literature.

Rationale

The rationale for conducting this research is to draw awareness to the difficulty and the natural reactions toward students with AD/HD. The focus will be to help teachers become more aware of their own personal biases. By being aware of these biases, this helps teachers to become better teachers and not allow these biases to interfere with teaching their students successfully.

Research Questions

There are three questions this study will attempt to answer. They are:

1. Does the literature explicit note if teachers' have biases, prejudices, expectations and stereotypes against students who exhibit Attention-Deficit Hyperactivity Disorder?
2. If so, does this affect the classroom instruction towards students with this disorder?
3. In what ways, does the teachers' biases, prejudices, expectations, and stereotypes affect the teacher/student relationship?

Definitions of Terms

There are terms that need to be defined for clarity and understanding. These are:

Learning: "a relatively permanent change in an organism's behavior due to experience" (Myers, 2007, p.313).

AD/HD: The American Academy of Pediatrics (AAP) defines Attention-deficit/hyperactivity disorder (AD/HD) as: A condition of the brain that makes it hard for children to control their behavior. It is one of the most common chronic conditions of childhood. All children have behavior problems at times. Children with AD/HD have frequent, severe problems that interfere with their ability to live normal lives (n.d.).

Limitations

A limitation of this study is the paucity of research literature on this topic. Another limitation of this study is relying that the information given is current and accurate.

Chapter II: Literature Review

This chapter will include a comprehensive overview of Attention-Deficit/Hyperactivity Disorder (AD/HD), prevalence among school aged children, its causes, diagnostic criteria, and the behavioral manifestations within the classroom. Additionally, the effects of labels and biases toward children with AD/HD will be discussed. This chapter will conclude with an analysis of teachers' perceptions of individuals and biases against students who exhibit Attention-Deficit Hyperactivity Disorders, and why these differences may appear. Also, a discussion of the effects of the amount of knowledge teachers have of AD/HD on the teacher and student relationship as well as the effects on teachers' views of services will be discussed. Furthermore, effective school-based interventions for students with AD/HD will be described.

Definition of AD/HD

The American Academy of Pediatrics (AAP) defines Attention-deficit/hyperactivity disorder (AD/HD) as:

> A condition of the brain that makes it hard for children to control their behavior. It is one of the most common chronic conditions of childhood. All children have behavior problems at times. Children with AD/HD have frequent, severe problems that interfere with their ability to live normal lives (n.d.).

The National Association of School Psychology (NASP) defines Attention-Deficit/Hyperactivity Disorder as:

> AD/HD is a disruptive behavior disorder characterized by levels of inattention, impulsivity and overactivity that are well beyond what is expected and appropriate for a given student's sex and age (n.d.).

Prevalence of ADHD

According to a study conducted by Center of Disease Control and Prevention (CDC) in 2006, "over 4 ½ million children 3-17 years old were diagnosed with AD/HD and boys are twice as likely as girls to be diagnosed" (n.p). In Wisconsin, 8.06% of children within the ages of 4-17 years of age have been diagnosed with AD/HD. Of children in Minnesota within the ages of 4 and 17 years old, 7.53% are diagnosed with AD/HD. The CDC stated that "diagnosis of AD/HD increased an average of 3% per year from 1997 to 2006" (CDC, 2006, n.p.). With these numbers, it is likely that a teacher in any given classroom or school will have to teach a student who exhibits AD/HD.

Causation of ADHD

Through many theories on the topic of ADHD have moved into the forefront of medical and scholarly debate, definitive causes have yet to be determined. A publication by the National Institute of Mental Health (n.d.) on AD/HD provides theories into its causes. The causes consist of genetic factors, environmental factors, brain development, diet and nutrition.

Genetic Factors. The first theory is that AD/HD is genetically inherited. Current studies suggest the possibility of the existence of certain gene(s) that may make it more likely for an individual to develop AD/HD. "From such studies, it has become clear that AD/HD is one of the most strongly genetic influenced of the common behavioral disturbances seen in children" (Swanson et al., 2001) (as cited in Asherson et al., 2005, p. 115). Studies have shown a possible AD/HD phenotype that can be isolated (Asherson et al., 2005). Additional research has to be completed in order to determine if there is an actual gene that is linked to AD/HD.

Environmental Factors. The second theory focuses on the influence of environmental factors. This theory suggests that an individual being exposed to some environmental toxins such

as cigarette smoking, alcohol during pregnancy and the exposure to high levels of lead may have a higher likelihood of developing AD/HD. A study conducted by Rodreguez and Bohlin, found that" prenatal exposure to stress and smoking is independently associated with later symptoms of AD/HD in children, especially in boys. Associations did not reach significance for girls" (2005, p. 250). Bohlin and Roderguez measured the amount of stress and smoking a mother had endured during the pregnancy and then the AD/HD symptoms of the babies at the age of seven years. The results from this study concluded that exposure to prenatal stress were independently linked to the predicted outcome of AD/HD symptoms based on the Diagnostic Statistical Manual- 4th Edition (DSM-IV) criteria, but only in boys. The effects of prenatal smoking did not have similar findings; there was not a significant link independently from stress to ADHD symptoms.

Brain Development. The next theory of the development of AD/HD focuses on brain development. Studies have shown that children who exhibit AD/HD have a smaller brain size, structure, and other abnormalities. Preliminary studies have shown that the brains of children with AD/HD "mature in a normal pattern but are delayed three years on some regions on average when compared to youth without this disorder" (NIMH, 2007, n.p.). Studies have also shown differences within the fronto-striatal circuits of children with AD/HD as compared to children without AD/HD. The abnormalities in this area could explain the main symptoms of ADHD that are manifested by inattention and hyperactivity/impulsivity. (Brieber et al., 2007) Furthermore, individuals who have undergone traumatic brain injuries exhibit similar behaviors as children with ADHD. Bullmore, Ellison-Wright, & Ellison-Wright (2008) concluded that children who have experiences traumatic brain injuries develop AD/HD- like symptoms that were not apparent

before. The appearances of AD/HD-like symptoms seem to be dependent upon the location in the brain and the severity of the injury.

Diet and Nutrition. Diet and nutrition has also been considered as an influential determinant of ADHD development. The final theory of the possible cause of AD/HD is nutrition, diet, and the consumption of artificial food additives. " The brains critical need for adequate nutrition is demonstrated by the effects of malnourishment on the developing brain, including reduced DNA synthesis, cell division, mylination, glial cell proliferation and dendrictic branching." (Sinn, 2008, p. 558) This theory poses that the lack of nutrition to the brain leads to AD/HD symptoms being exhibited in its host. Sinn states two areas of nutrition correlate with the development of AD/HD. The areas are the lack of the consumption of zinc and magnesium. Sinn found that after looking in various parts of the world that areas that consisted of children who exhibited AD/HD had lower levels of zinc (2008). Sinn also found that the lower levels of zinc correlated with how severe the AD/HD symptoms were (Sinn, 2008). Along with the severity of the symptoms, Sinn also found that "behavioral and emotional symptoms also deteriorated in hyperactive children in association with changes in zinc levels"(Sinn, 2008, p. 559). Also, research has determined possible connections between high magnesium levels and distractibility (Sinn, 2008).

A study conducted by Burshteyn, Cea-Aravena and Schnoll (2003) reviewed the many theories of AD/HD based on diet, nutrition, food allergies and fatty acids. The first theory was based on Fiengold, who theorized that "food additives, specifically synthetic food colors and flavors, and naturally occurring salicylates were responsible for hyperactive behaviors in some children" (Fiengold, 1975; as cited in Burshteyn, Cea-Aravena & Schnoll, 2003, p. 64). He then created a diet called the "Kaiser-Permanente diet that eliminated all artificial additives, coloring

and food that contained salicylates. His diet and theory has been questioned since and found that "In general, the specific elimination of synthetic food colors from the diet did not appear to be a major factor in the reduction of hyperactive behavior in the majority of children" (Silver, 1986) (as cited in Burshteyn, Cea-Avarvena, & Schnoll, 2003, p. 65).

The consumption of sugar has also been questioned as a cause for ADHD. Multiple studies have been completed to determine a link between the consumption of sugar and AD/HD. The studies have included the consumption of sucrose and artificial sweeteners such as aspartame. In general, these studies have been unable to make a link of causation between AD/HD symptoms and the consumption of sugar because of the many limitations within the studies.

Food allergies have also been researched as a possible cause of AD/HD symptoms. Eggers (1985) (as cited in Burshteyn, Cea-Aravena & Schnoll, 2003, p.72) found that "food sensitivities or allergies can be involved in provoking behavior problems." The allergies ranged in types of foods and additives. More research has to be completed in this area to determine whether or not a definitive link between food allergies and AD/HD symptoms exists. Though studies are inconclusive at this time, researchers are also attempting to determine the impact of omega 3 and omega 6 fatty acids on ADHD symptoms (Burshteyen, Cea-Aravena & Scholl,2003).

Diagnostic Criteria & Methods

Though typically diagnosed in childhood ADHD can also be diagnosed in adults. The Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition Text Revised (DSM-IV TR) (2000), is used to clinically diagnose AD/HD. According to the DSM-IV TR, the criteria individuals must meet in order to be diagnosed with AD/HD are:

A. Either (1) or (2):

1. six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

   a. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

   b. often has difficulty sustaining attention in tasks or play activities

   c. often does not seem to listen when spoken to directly

   d. often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

   e. often has difficulty organizing tasks and activities

   f. often avoids, dislikes, or is reluctant to engage in tasks that require sustaining mental effort (such as schoolwork or homework)

   g. often loses things necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools)

   h. is often easily distracted by extraneous stimuli

   i. is often forgetful in daily activities

2. six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with development level:

Hyperactivity

   a. often fidgets with hands or feet or squirms in seat

b. often leaves seat in classroom or in other situations in which remaining seated is expected.

c. Often runs about or climbs excessively in situations in which it is is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)

d. often has difficult y playing or engaging in leisure activities quietly

e. is often "on the go" or often acts as if "driven by a motor"

f. often talks excessively

Impulsivity

g. often blurts our answers before questions have been completed

h. often has difficulty awaiting turn

i. often interrupts or intrudes on others (e.g. butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were presented before age 7 years.

C. Some impairment from the symptoms is presented in two or more settings (e.g. at school [or work] and at home)

D. There must be clear evidence of clinically significant impairment in school, academic or occupational functioning.

E. The symptoms do not occur exclusively during the course of Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorders and are not better accounted for by another mental disorder.

There are three subtypes; the DSM-IV defines these subtypes as:

Attention-Deficit/Hyperactivity Disorder, Combined Type:

> This subtype should be used if six (or more) symptoms of inattention and six (or more) symptoms of hyperactivity-impulsivity have persisted for at least 6 months. Most children and adolescents with the disorder have the Combined Type.

Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type:

> This subtype should be used if six (or more) symptoms of inattention (but fewer than six symptoms of hyperactivity-impulsivity) have persisted for at least 6 months. Hyperactivity may still be a significant clinical feature in many such cases, whereas other cases are more purely inattentive.

Attention-Deficit/Hyperactivity Disorder, Predominately Hyperactive-Impulsive Type:

> This subtype should be used if six (or more) symptoms of hyperactivity-impulsivity (but fewer than six symptoms of inattention) have persisted for at least 6 months. Inattention may often still be a significant clinical feature in such cases (p. 85-91).

With these three different subtypes, two children who exhibit AD/HD could act differently. For example, a child could be overly disruptive in the classroom and squirm in his/her chair. Another student with a label of AD/HD could appear to be working on an assignment but are really planning what they are going to do during recess. These differences must be kept in mind when suspecting AD/HD and working with students, who have been diagnosed with AD/HD (DuPaul & Stoner, 2006).

There are multiple methods used in clinically diagnosing individuals with AD/HD. Since the behaviors have to be seen across many different environments, many tools and school

personnel along with medical professionals are used to aid in diagnosis. In the school environment, a student can be assessed for AD/HD tendencies and the effects of tendencies on their success in the educational environment. According to NASP (2005), methods that are used are "formal observations in multiple settings, interviews with the student and relevant adults, rating scales completed by family, teachers, and the individual, developmental, school and medical histories, and finally formal tests to measure attention, persistence, and related characteristics"(n.p.).

A typical measurement of behavioral rating scales used in assessing AD/HD is called the Behavioral Assessment System for Children (BASC-II). The BASC-II consists of behavior rating scales to be completed by individuals suspected of having ADHD, their parents, and teachers. The teacher completes a Likert Scale questionnaire that ranges from "Never" to "Almost Always" frequencies of certain behaviors, such as adaptive and maladaptive behaviors observed in the school setting. The parent completes a similar questionnaire that focuses on the frequencies of the behavior at home or in the community. The individual in question also completes a questionnaire that contains true or false questions and some Likert Scale questions. All three of these questionnaires are then graphed. (Pearson Education Ltd, 2009)

AD/HD is also assessed in the schools using the Conner's Rating Scale. The Conner's Rating Scale is an instrument that consists of observer rating and self-rating reports that help assess AD/HD. This rating scale also evaluates problem behavior in children and adolescents. It is more focused on AD/HD behaviors compared to the BASC-II. Along with help determining if a student is exhibiting AD/HD type behaviors, the Conners Rating Scale can also be used as a screener. This rating scale is completed by a variety of individuals. The individuals can include the parents, teachers, care givers and the individual themselves. The school teacher, parent and

individual complete a Likert rating scale that is similar to the BASC-II. The results from each rating scale are then compared to determine whether or not the student exhibits ADHD like behaviors or other behavioral disorders that the Conners Rating Scale measures. (Pearson Education Ltd, 2009)

AD/HD in the classroom

Many of the behaviors that are associated with AD/HD are observed in and out of the classroom. The Center of Disease Control and Prevention (CDC) states that children with AD/HD might display these types of behaviors in and out of the classroom:

> a hard time paying attention, day dream a lot, not seem to listen, be easily distracted from schoolwork or play, forget things, be in constant motion or unable to stay seated, squirm or fidget, talk too much, not be able to play quietly, act or speak without thinking, having trouble taking turns, and interrupting others (2006, n.p.).

According to Abikoff et all (2002) (as cited in Hay, D., Kos, J., & Richdale, A. (2006)) "While boys with AD/HD show significant behavioral problems in the classroom, girls with the disorder are more likely to have predominately inattentive symptoms and are little more disruptive than typically developing children" (p. 148).

The NASP states that children with AD/HD may have "difficulties concentrating on schoolwork, frequently interrupt conversations or activities, and have difficulty remaining seated when requested to do so" (2005) (n.p.). Though, it is typical for children at certain ages to exhibit these types of behaviors, most children will usually outgrow them. The issue arises when it is no longer developmentally normal for these behaviors to be exhibited. Within these behaviors that are exhibited by students with AD/HD, there is a sex difference in what is exhibited in the classroom. These behaviors that are displayed create significant difficulties in functional areas.

Highly correlated with AD/HD are academic underachievement, high rates of noncompliance and aggression, and disturbances in peer relationships (DuPaul & Stoner, 2003, p.75).

Academic Performance. Students who exhibit AD/HD tend to underachieve academically. They are less engaged academically and exhibit higher rates of off-task behavior especially in independent work time. These students frequently do not achieve to their academic potential, as a result are at a higher risk for grade retention and dropping out of school. They are also less likely to pursue post secondary education. (Clearly et al, 2006)

There have been two hypotheses on why students who exhibit AD/HD tend to have lower achievement rates. According to McGee and Shar (1988) (as cited in DuPaul & Stoner, (2003)) if a student has difficulties learning, the difficulties lead to AD/HD. The authors hypothesize that those children who have difficulties learning in school leads to "chronic academic failure over time causes a child to develop a poor academic self-concept" (DuPaul & Stoner, 2003, p.77). Because of this poor academic self concept the student will become less motivated to achieve in the classroom and start to exhibit AD/HD tendencies which then leads to an increased amount of underachievement.

The second hypothesis suggests that subsequent behaviors that are displayed by students lead to academic problems. This hypothesis states that because of the lower rates of on-task behaviors during instruction and work time leads to a harder time understanding the topic or concept. This then leads to difficulties in learning. The lack of on-task behavior also leads to the inability to answer questions about the material and unable to complete the material appropriately compared to their same aged peers.

AD/HD Students & Social Difficulties. Students' who exhibit AD/HD often times have other difficulties in the school environment in addition to their academic struggles. These

students have a hard time making and maintaining friends. "Some studies have suggested that children diagnosed with AD/HD are more likely to be rejected by peers than children with other disruptive behavior disorders" (Feinberg & Frankel, 2002, p.125-128). A study conducted by Hosa indicated that "children with AD/HD were nominated as nonfriends by children of higher social preference and who were better liked by others" (2005, p. 411). These difficulties are related to the problems with impulse control and inattention.

DuPaul & Stoner provide some examples of how the symptoms of AD/HD can result in difficulty in making friends. They offer that a student who exhibits AD/HD may enter an ongoing activity impulsively without asking permission or not taking inconsideration of the other player. It can also be hard for these types of students to be patient with turn taking which can discourage others from playing with them. (2003) Feinberg and Frankel indicated social deficits a child who exhibits AD/HD may have:

> Child interviews about hypothetical social situations have revealed that children diagnosed with AD/HD think about less friendly and effective, more assertive and impulsive solutions to social problems than their non-AD/HD peers. Similarly, they tend to attribute hostile intent, expect future aggression but are prone to gather less information before making their conclusions (2002, p.132).

Similarly, it has also been found that children with AD/HD are "less likely to change their behavior to fit the social situation (Feinberg & Frankel, 2002, p.133).

Effects of the AD/HD label on a student

Corin (as cited in Cornett-Rutz and Hendericks (1993))suggests, "teachers, even without their awareness, may convey negative messages about labeled children to peers, parents, other teachers, and to the labeled child" (p.349). A study conducted by Cornett-Rutz and Hendericks

(1993, p. 349-355) found that a label of AD/HD did not have an effect on teachers and peer evaluations of students rather the behaviors presented by the student seemed have a greater effect on the evaluations. Viewing a tape that had stereotypical behaviors of AD/HD seemed to have a more persuasive effect on their evaluations of the students. The peers were able to identify who was different from the other students. The reactions of the teachers and peers were mainly on the individual rather than if they had a label of AD/HD. This could have resulted from the fact that the teachers are more educated than teachers from previously completed studies, and that the schools where the participants were taken from had students who exhibited AD/HD mainstreamed into the general population classroom. The results from of this study shows that the label of AD/HD is not impactful on the evaluation of individuals who have that label, but, the behaviors that are exhibited by students who have AD/HD are not ignored and can still have a negative effect when others such as teachers and peers are judging them.

Teachers Attitudes, Perceptions, and Biases

There are some common themes of biases among teachers toward students diagnosed with AD/HD, as documented in a study by Harrison & Rush (2008). In this study, the teachers were given a questionnaire to complete that included possible biases towards AD/HD students and the teachers' abilities to educate this population in a mainstream classroom. The teachers indicated certain biases of students who exhibit AD/HD. The item that represented this bias was that "I feel forced to inflate grades and/or promote adolescents with AD/HD" (Harrison & Rush, 2008, p. 215).

Along with the academic biases, there was also evidence of teachers' general attitudes and perceptions of students who exhibit AD/HD. The biases in this area varied from biological aspects of AD/HD to how the symptoms manifest in the classroom. Some teachers indicated that

AD/HD is biological and that these students are unable to control their behaviors, while other teachers indicated that they believed that students would grow out of AD/HD. Other opinions and sentiments expressed by teachers included; students who exhibit AD/HD change their behaviors and feelings from class to class and that the students use their diagnosis as an excuse as well as these type of students are not smart enough to take advantages of their services that are being provided.

Harrison & Rush concluded two implications from their study. The first implication is that teachers develop biases through the frustrating classroom experiences with these types of students. These biases include teachers feeling inadequate in their ability to teach these students in structured classroom. These biases impact their effectiveness to teach these types of students. "Teachers with negative perceptions about working with adolescents with AD/HD may be conceptualizing that the task of working with such students is difficult and uncomfortable because they have not received adequate training on AD/HD" (Harrison & Rush, 2008, p. 219). Some of the items on the questionnaire relating to this implication are, that teachers know that these students need more help that they are unable to provide them; they lack helpful materials to help these types of students and are frustrated with amount of challenging students within their classroom (Harrison & Rush, 2008). It was also found that teachers with positive points of view of students with AD/HD wanted to have more training in teaching and behavioral management skills for students with AD/HD. Responses in this area included "It's a challenge for me to teach adolescents with AD/HD" (Harrison & Rush, 2008, p. 214), and "I need more training specifically on adolescents with AD/HD" (Harrison & Rush, 2008, p. 215).

The second implication was determined based off of the responses that referred to teachers feeling of inadequacy in the special education system itself. The researchers reported an

implication from these particular findings that related to the fact that teachers stated that they lack of education related to general training and classroom management strategies when working with these students. "Teachers with negative perceptions about working with adolescents with AD/HD may be conceptualizing that the task of working with such students is difficult and uncomfortable because they have not received adequate training on AD/HD" (Harrison & Rush, 2008, p. 219). Some of the items on the questionnaire relating to this implication are that teachers know that these students need more help that they are unable to provide them, they lack helpful materials to help these type of students and are frustrated with amount of challenging students within their classroom (Harrison & Rush, 2008, pg. 216). It was also found that teachers with positive point of view of students with AD/HD wanted to have more training in teaching and behavioral management skills for students with AD/HD.

The frustration reported by teachers in this study on the special education system itself was indicated through the responses "more recommendations for interventions for adolescents with AD/HD would be helpful" (Harrison & Rush, 2008, p. 214), and "more communication with the school psychologist would be useful teaching adolescents with AD/HD" (Harrison & Rush, 2008, p.214). The teachers also reported that the interventions that are provided and discussed during the IEP meeting are minimally effective. The researchers stated an implication in this study from the issues the teachers expressed with the system-wide support in the school. The implication includes the lack of communication and understanding between the teacher and school's support staff such as the school psychologist. This miscommunication may serve as "to quell some of the more negative conceptualization of teachers with more pessimistic views about adolescent students with AD/HD as well as propel further more effective efforts by teachers, who have more willingness for working with students with AD/HD" (Harrison & Rush, 2008,

p. 219).

Another study supported the aspect of Harrison & Rush's finding that teachers became frustrated when working with students who exhibit AD/HD in the classroom. A study conducted by Beszterczey et al. (2002) found that general education high school teachers reported greater stress overall in their interactions with students who exhibit AD/HD compared to students who do not exhibit AD/HD. Of these interactions, there were significantly higher rates of negative interactions with students who exhibit AD/HD. Due to behavioral interactions, teachers were required to attend and interact more frequently with these students than the rest of the class. This indicates that teachers show a higher percentage of attention to these students compared to students who do not exhibit AD/HD.

Other factors play into teachers' biases and perceptions of students with AD/HD. The study concluded that the amount of stress displayed by the teachers depended on the behaviors that were displayed by the students with AD/HD. The behaviors that created higher levels of stress for teachers were associated with students who exhibit AD/HD with higher levels of aggression and oppositional behaviors and/or poor social interaction skills compared to others who exhibit AD/HD who do not exhibit those behaviors.

The Beszterczey et al. indicates that these findings could only partially account for the higher levels of stress reported by teachers because of the behaviors that were displayed by students who exhibit AD/HD. Another contributing factor for the stress presented by the teachers could have resulted from the compatibility between the student and the teacher instead of the student's AD/HD behaviors (2002).

Other studies explored the lack of education of teachers in the area of AD/HD was similar to the finding in Harrison's & Rush's study. Preschool teachers were assessed on their

education, knowledge and perceptions of AD/HD through a survey in a study done by Stormont & Stebbins. Of these participants the most common answers for how they learned about AD/HD was through a magazine or a journal article. The least common answer was through taking a course specifically on AD/HD. Fewer than half reported that they attended an in-service or a workshop on AD/HD. This finding is important since "without quality educational experiences, including reading journal articles, with summaries of scientific research, teachers may only be exposed to information from the popular media" (Stormont & Stebbins, 2005, p.59). The higher amount of education acquired by the individual teacher, the more knowledge the teachers knew of AD/HD. The teachers knew some information about ADHD but did not know as much on the identification process of AD/HD. This suggests that the teachers were not trained on how to identify AD/HD (Stormont & Stebbins, 2005).

Another study showed the impact of the amount of education and their perceptions of students with AD/HD and the services these students use. A teacher's knowledge of AD/HD also has an impact on their perceptions of students with AD/HD and the type of services that these students receive. Results from a study conducted by Cormier et al. (2008) indicated that teachers who have high to average knowledge of AD/HD reported that they were more likely to seek helpful strategies and information to help these types of students as well as seeing the benefit in the services such as interventions being provided. However, these teachers reported that a student with AD/HD was more likely to interfere with the classroom and peer relationships compared to other peers. These teachers also indicated that they felt less confident in their ability to manage these children.

School-based Intervention Strategies

School-based interventions are plans or strategies that are used within the classroom and school setting to help reinforce positive behavior that are evidenced-based. There are two types of school-based interventions, classroom and school-wide. Classroom behavioral interventions involve "systematic changes to antecedent events, the activities that happen before the target behavior and consequence events- or activities that follow the target behavior" (NASP, 2005, n.p). Of these interventions the most successful interventions include equal used of antecedent based and consequence based procedures.

School wide interventions are interventions that are established and implemented throughout the whole school. According to DuPaul & Stoner, when an intervention is being constructed for a student who exhibit AD/HD, certain guidelines should be followed. The first guideline suggests that the intervention development, evaluation, and revision are data based activities (DuPaul & Stoner, 2003). When choosing an intervention technique, school personnel should seek empirically supported intervention strategies for students who exhibit AD/HD. Additionally, the success of the intervention technique should be monitored and evaluated on an ongoing basis (DuPaul & Stoner, 2003).

Child advocacy is the second guideline that should be followed when choosing and implementing an intervention. The primary goal of the intervention has to be focused on the child's well-being, rather than making the environment for the teacher easier to teach in. Interventions procedures must be thoroughly identified and defined, as well as implemented with integrity by personnel with clearly delineated responsibilities. The third guideline is that responsibilities should be clearly delineated amongst all parties involved. This ensures that the intervention is being implemented appropriately. The promotion of increased rates of appropriate

behavior and/or improved rates of learning is the fourth guideline. This means that the intervention must provide the individual the appropriate way of acting or gain a better understanding of a topic/subject. The intervention should not just decrease inappropriate behavior such as blurting out answers in class (DuPaul & Stoner, 2003). The causes for the behaviors of the identified child, teacher and on the classroom should be unknown is the final guideline. This means that it must not be determined before the intervention is implemented on how it will affect the student, teacher or the classroom environment.

Classroom interventions that work well with students with AD/HD include; token contingency management strategies such as token economies and behavioral contracts. Contingency management strategies "focus on altering target behaviors primarily through the manipulation of consequences following the occurrence of targeted problem and appropriate behaviors" (Dupaul & Stoner, 2003, p. 163). The main aspects of behavioral reinforcement include involving secondary reinforcers (token reinforcement) that provide the reward immediately. Specifically, rewards are given when the replacement behavior being presented, and effectiveness that is needed for students who exhibit ADHD. This can increase appropriate classroom behavior and/or academics (DuPaul & Stoner, 2003).

According to DuPaul & Stoner (2003), certain steps must be followed in order to implement a behavioral reinforcement intervention appropriate. The first step of token economy intervention is to target the problematic behavior in the classroom. This is done through the school psychologist interviewing the teacher(s) and directly observing the student in the different situations and environments where that behavior exhibits itself. By observing, a better understanding and definition of the behavior will be determined; including the motivators to

exhibit the behavior which includes the antecedents and consequences, environmental factors etc.

After interviewing the teacher and observing the students in the classroom, the second step is to select a target behavior. These target behaviors are the behaviors that a teacher would like to replace with a more appropriate behavior. These behaviors usually include academic tasks such as completing a certain number of math problems within a specified amount of time. Target behaviors are specific actions the teacher would like the student to take. An example of this could be raising their hand when wanting to ask a question or providing an answer instead of blurting out the question or answer.

Once the target behavior is selected, the types of tokens or secondary reinforcement the student receives are chosen and "cost" is established. Tokens may include; stickers, poker chips, or points given for tasks completed. The number of tokens that a student may get has to be determined based on the difficulty of the task. This means that the more difficult a task is or the larger amount of time the task should take to complete is worth more tokens then a easier task that is not suppose to take as long to complete. The more difficult and time consuming tasks should be broken down into smaller tasks so the student is able to earn tokens for partially completing an task within a certain amount of time or reaching a level of performance.

When the type and the value of the tokens are decided, the teacher and the student should brainstorm and determine appropriate activities in the classroom or in the school that a student may trade the earned tokens for. The items should range from low to high cost items. A teacher may benefit from discussing this activity with the student's parent to coordinate this intervention at home. The student could then earn tokens at school or at home that could be used in either environment.

Students should be aware of the value of the token and the expectations required. Teachers should explain and demonstrate the appropriate actions to be completed to earn a token. The expectations should be at a very reasonable level in the beginning to ensure early success and buy-in to the intervention. The completion of 50% of a required task for the first couple days of the intervention may be efficient to use and then slowly increase the percentage of completion as time goes by (DuPaul & Stoner, 2003).

The tokens earned must be exchanged for an activity or privileges at least daily. The rule is "shorter delays between receiving tokens and exchanging then for backup reinforcers will result in a more effective program" (DuPaul & Stoner, 2003, p. 151). If the tokens are not "cashed in" until a long period of time has elapsed, the student may find the rewards not worth exhibiting the appropriate behavior or task and will not do it.

The effectiveness of the intervention has to be monitored and evaluated in an ongoing fashion. This is done by using multiple outcome measures and consultation between the school psychologist and teacher who are involved in the intervention implementation. These results can then determine if other secondary reinforcers or activities should be added into the program as well as if any previously determined secondary reinforcers should be eliminated. Also, new target behaviors may be identified and added into the program as well. The rate of which the tokens are given and the amount for tasks can be changed at this point as well. (DuPaul & Stoner, 2003)

Another type of intervention that has been proven by research to work well with students who exhibit AD/HD is having a contingency contract. This type of contract is between the student and the teacher and consists of what is seen as appropriate and inappropriate within the classroom setting. A token reinforcement program is used along with this intervention to help

ensure the agreed upon behaviors are exhibited. The reinforcement within this intervention is more delayed than in a (token-reinforcement-only) intervention between the completion of the replacement behavior and the reinforcement (DuPaul & Stoner, 2003).

Self management strategies are also beneficial for students who exhibit AD/HD (DuPaul & Stoner, 2003). These strategies help the student learn self control. Self-monitoring is the method of teaching the child how to notice and record their own behavior. For example, a student may record how many items he completed on his math assignment during independent work time. The teacher would then check in on the student and provide them with attention for completing the work. DuPaul & Stoner state that self-monitoring can also be beneficial for adolescents and organizational skills (DuPaul & Stoner, 2003).

In conclusion, AD/HD is a medical diagnosis and is common within the school environment. Medical and scholarly research has recently focused on the causation(s) of AD/HD but as yet to determine a definite link to any of the possibilities. Within the diagnostic process of AD/HD, multiple tools and school personnel along with medical personnel are involved. School personnel conduct observations and complete rating scales of the student's behavior within the school environment. Overall, there is a higher frequency of AD/HD among boys than girls as well as difference between symptoms of AD/HD that are typically exhibited.

In the school environment, students who exhibit AD/HD can have difficulties learning. There are two possible explanations for the link between the learning difficulties and AD/HD. A student may exhibit AD/HD because of having difficult time learning. The difficult time learning in the classroom leads to less motivation to achieve. This less motivation to achieve leads to exhibiting AD/HD like symptoms in the classroom. The other possibility is that the symptoms that are exhibited by students with AD/HD lead to learning difficulties. The inability to pay

attention and staying on task leads to the child missing important information which leads to the learning difficulties. Students who exhibit AD/HD also tend to have trouble forming as well as maintaining friendships among peers. These difficulties have been reported to result from the exhibited AD/HD symptoms and not paying attention to social cues.

There is limited research of how and what teacher's attitudes, biases and perceptions are of students who exhibit AD/HD. Research has shown that the label of AD/HD does not lead to teachers and peers having negative views of the student. Rather it is the student's actions that lead to the teachers and peers having a negative view of them.

Teacher's negative perceptions and biases seemed to be linked to their knowledge of AD/HD, educational experience and system-wide support they receive in their school district. Research has shown that students who exhibit AD/HD are more frustrating and stressful for teachers to teach. These frustrations and stress lead to negative biases and perceptions of these types of students. The frustrations and stress with working with these types of students are based off of having limited knowledge and a perception of an inadequate system-wide support tended to have more negative perceptions and biases against student who exhibit AD/HD.

When implemented correctly, there are techniques that teachers can use in the classroom that can be effective with students who exhibit AD/HD. Reward-based contingency management strategies such as token economies and behavioral contracts have been seen to be beneficial with students who exhibit AD/HD. These strategies require the student to complete a certain amount of tasks that is designated by the teacher in order to earn a prize or a privilege. These strategies reinforce positive behavior exhibited by the student and deemphasize negative behavior. These strategies help rewire the brain to more appropriate behavior. These strategies are helpful for both behavioral and academic issues.

Further understanding and implications of this literature will be identified and discussed through a critical analysis in Chapter III. Recommendations derived from the literature review will also be discussed as well.

Chapter III: Discussion

This chapter will include a critical analysis of the literature presented in Chapter II. In addition, implications for teachers and other school personnel will be discussed. The chapter will conclude with recommendations based from the findings found in the review of the literature.

Critical Analysis

It is apparent that AD/HD is a very common diagnosed disorder in the schools. Center of Disease Control and Prevention (CDC) reported that in 2006, "over 4 ½ million children 3-17 years old were diagnosed with AD/HD and boys are twice as likely as girls to be diagnosed" (CDC, 2006, n.p). These numbers do not include students who are exhibiting AD/HD symptoms that have not been diagnosed yet. Symptoms, possible causes, teachers' and peers perceptions, biases and attitudes towards students with AD/HD and effective school-based strategies have been examined.

There are a variety of symptoms that a child may exhibit that are diagnosed with AD/HD. The National Association of School Psychology (NASP) indicates that symptoms may include difficulty paying attention, interrupting conversations and activities (2005). The CDC states that children with AD/HD may be unable to remain sitting in their seats, forget things, talk too much, and having troubles taking turns (2006). These symptoms that are exhibited by children who are diagnosed with AD/HD may vary. Research conducted by Abikoff et all (2002) (as cited in J.M. Kos et al (2006)) indicates that boys are more likely to have behavioral problems in the classroom while girls are more likely to be inattentive.

Medical and scholarly research has focused on the causation of AD/HD in recent years. Research that has been reviewed focus on a single cause of AD/HD. Areas such as genetics, environmental factors, brain development, traumatic brain injury, diet and nutrition have been

researched to determine a link with the exhibition of AD/HD symptoms but none have been determined as a definite link to the causation of AD/HD. Research by Swanson et al., (2001) (as cited in Asherson et al., (2005)) states that AD/HD has a strong genetic influence compared to other common behavioral disturbances in children. Studies in this area have also identified a possible phenotype that is linked to AD/HD.

Environmental factors such as stress and smoking during pregnancy have been linked to the exhibition of AD/HD. A study conducted by Rodreguez and Bohlin (2005) indicated that stress during pregnancy is highly correlated with the exhibition of AD/HD. Also in this study, smoking during pregnancy correlated with the exhibition of AD/HD but not as strong of a correlation compared to stress during pregnancy.

Brain development has also been examined as a cause of AD/HD. Preliminary studies have shown that children with AD/HD tend to have a smaller and less developed brain in areas that could explain for the AD/HD behaviors being exhibited compared to non-AD/HD children (NIMH, 2007). Bullmore, Wright, & Wright (2008) concluded that children who have exhibited traumatic brain injuries develop AD/HD like type behaviors that were not exhibited before the injury. The location and severity of the injury impacts of whether or not if AD/HD like symptoms will be exhibited.

Diet and nutrition has been researched as a cause of AD/HD. A diet that is lacking in the areas of zinc and magnesium has been linked to the exhibition of AD/HD symptoms. Sinn (2008) has reported that a change in the consumption of zinc in a diet can lessen AD/HD symptoms being exhibited. A diet that consists of large amounts of artificial coloring, sugar, and preservatives have been an area of research in the causation of AD/HD. Burshteyn, Cea-Aravena

and Schnoll (2003) reviewed theories in this area and found that in general, these studies were unable to connect the consumption of these items to AD/HD symptoms being exhibited.

AD/HD is a medical diagnosis that is examined across many different environments including the school environment. The criterion that needs to be identified and exhibited are within the DSM-IV-R. School personnel are involved as well as the parents and medical professionals in the diagnostic process. Within the school environment, observations and behavioral rating scales such as the BASC-II and the Conners Rating Scale are completed. The observations and behavioral scales focus on the frequency of AD/HD type behavior that are exhibited by the student in question. The behavioral rating scales completed by the teachers, parents and the individual in question (Pearson Education Ltd, 2009). The school psychologist is normally the one that is conducting the classroom observations.

Students who exhibit AD/HD tend to have troubles learning, creating and maintaining friendships with others. McGee and Shar (1988) (as cited in DuPaul & Stoner, (2003)) indicate two possible reasons for the learning difficulties. Students who have a hard time learning may become less motivated to succeed in the classroom. This lack of motivation leads to AD/HD type behaviors being exhibited in the classroom since the student is no longer focusing their attention on their school work. The second possible factor in a student with AD/HD having difficulties learning is a result of the AD/HD behaviors being exhibited. A student with AD/HD may be unable to sustain their attention during instruction time and as a result misses important information. The student then does not understand the concepts, which leads to them having learning difficulties. Feinberg & Frankel (2002) found that children who exhibit AD/HD are more likely to be rejected by peers because of the behaviors being exhibited. They also

concluded that children who exhibit AD/HD may not pay attention to social cues, are more impulsive and therefore are unable to change their behaviors to fit the situation.

There has been little research conducted on teachers' attitudes, biases, and perceptions of students with AD/HD specifically. The label of AD/HD does not seem to have an effect on the perceptions of students and teachers of a student who exhibits AD/HD. Cornett-Rutz and Hendericks(1993) found that it was the behaviors that a student with AD/HD exhibits that had a negative effect of how peers and teachers viewed that student not the label of AD/HD.

Through the available research, there has been biases identified that teachers have of students who exhibit AD/HD. These biases consist of academic abilities, behavioral issues, and of AD/HD itself. Harrison & Rush (2008) reported that teachers identified with biases that claimed students with AD/HD were incapable of learning and that the student did not earn the grade. Teachers also indicated that AD/HD was biological and the students could not control their behavior. Some teachers also reported that AD/HD students used their label as an excuse to get out of work.

A study conducted by Beszterczey et al. (2002) also found that teachers felt that students with AD/HD were more stressful to teach. Teachers in this study had more negative interactions with students who exhibited AD/HD. Harrison & Rush (2008) also reported possible factors that contributed to the negative impact of the teacher's view of students with AD/HD. In this study, the teachers reported a lack of ability in being able to teach these types of students. The teachers also indicated a lack of support by the other school personnel such as the school psychologist. The teachers reported that they would like more training and communication with the school psychologist in the area of AD/HD and how to teach these students more effectively.

The amount of education and training a teacher has about AD/HD also affects their willingness to seek and apply strategies. Cormier et al. (2008) reported that teachers with higher education in AD/HD were more likely to seek services that are beneficial for students and creates a more effective learning environment.

There has been research conducted on interventions or strategies that can be used in the school environment that is effective with students who exhibit AD/HD. These strategies have to be implemented correctly in order to be effective. DuPaul & Stoner (2003) reported that using reward-based contingency plans such as token economies and behavioral contracts are effective to use with students who exhibit AD/HD. A student is required to demonstrate an appropriate behavior that has been determined by the teacher. Once the student demonstrates the appropriate behavior a certain amount of times, the student is then rewarded with a prize or privilege. These strategies provide rewards in a frequency that is appropriate for students with AD/HD. These strategies can be used for both behavioral and academic problems. An investigation of what motivates the student to perform the inappropriate behavior should be completed in order for the strategies to be implemented correctly.

DuPaul & Stoner (2003) describes the procedure that must be followed for the strategy to be implemented correctly. The procedure consists of consultation between the school psychologist and teacher. The school psychologist and teacher determine the problematic behavior and what the appropriate behavior the teacher wants the student to exhibit. The school psychologist and teacher then determine the appropriate strategy to use with this student. The teacher and the student then discuss and choose an appropriate reward for the wanted behavior. The intervention is then monitored to determine how successful and if any changes need to be made.

Recommendations

The first recommendation is that school district personnel should provide more training and education in the area of AD/HD for general education teachers. This education and training can be provided by in-services with professionals who specialize in AD/HD in general, the diagnostic process, IEP, and interventions. Research has shown that teachers with more education are more confident in their ability to teach these types of students. These types of teachers are also more willing to seek information and strategies to use with these students.

The second recommendation is for school psychologists to provide more support for the general education teachers. The school psychologist should have an active role with consulting and working with the teacher in interventions strategies and the implementation of the interventions. School psychologists should also be in an active role in the modification of the interventions strategies to make them more effective and successful. The school psychologist should be providing support to help the teacher and student succeed.

The final recommendation is more research is needed in the area of teacher's perceptions, attitudes, and biases of students with AD/HD, more research is needed. More research would further the understanding of how that affects the teacher and student relationship. Gaining knowledge in these areas will help other school personnel such as school psychologists be able to determine more effective ways to consult and help these teachers be more of an effective in the classroom. Research should also be conducted in the training of general education teachers in the area of AD/HD. This research could lead to a better understanding of how teachers are faced with children with AD/HD type behaviors. The prevalence of students who are diagnosed with AD/HD in the school environment indicates that AD/HD and effective strategies that can be used in the general education classroom should be included in the pre-service training of all teachers.

This would create a more educated and capable teacher who can provide a better education for students with AD/HD and other students. These teachers may also not develop the biases, perceptions and negative attitudes against students with AD/HD.

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